AMENDMENTS TO THE CLAIMS

1. (Currently amended) Telecommunication equipment, comprising:

a switch coupled with a plurality of Ethernet ports for receiving Ethernet data frames, each Ethernet data frame including a header information, the switch operable to insert without removing any existing header information a unique port identifier into a predefined header field of each Ethernet data frame from each one of the plurality of Ethernet ports to identify the Ethernet port from which each Ethernet data frame is received; and

a multiplexer coupled to the switch and operable to multiplex the Ethernet data frames containing the port identifiers into a single serial data stream, the multiplexer being operable to multiplex the Ethernet data frames containing the port identifiers ~~from the plurality of Ethernet ports~~ into a single synchronous payload envelope.

2. Cancelled.

3. Cancelled.

4. Cancelled.

5. (Currently amended) The telecommunication equipment, as set forth in claim 1, further comprising a subscriber access multiplexer operable to receive the single serial data stream from the multiplexer, demultiplex the single serial data stream into Ethernet data frames from each Ethernet port, and route the demultiplexed Ethernet data frames based on the unique port identifier.

6. (Currently amended) Telecommunication equipment, comprising:

a switch having a plurality of ports for receiving data frames from a plurality of ports and switching the data frames to another plurality of ports, each data frame including a header information, the switch operable to insert a unique port identifier into a predefined header field of each data frames from each port to identify the port from which each data frame is received; and

a multiplexer coupled to the switch and operable to multiplex the data frames containing the port identifiers ~~from the plurality of ports~~ into a single serial data stream, the multiplexer being operable to multiplex the data frames containing the port identifiers from the plurality of ports into a single synchronous payload envelope;

wherein the data frames are Ethernet data frames and the predefined header field includes a virtual local area network (LAN) field.

7. (Currently amended) Telecommunication equipment, comprising:

a switch for receiving data frames from a first plurality of ports and switching the data frames to a second plurality of ports, each data frame including a header information, the switch operable to insert without removing any existing header information a port identifier into a predefined header field of each data frame to identify the port from which that data frame is received;

a multiplexer coupled to the switch and operable to multiplex the data frames containing the port identifiers ~~from the second plurality of ports~~ into a first single serial data stream, the

multiplexer being operable to multiplex the data frames containing the port identifiers ~~from the second plurality of ports~~ into a single synchronous payload envelope;

a subscriber access multiplexer operable to receive data from a plurality of sender nodes in a network and operable to insert a port identifier into ~~the~~ a predefined header field based on an internet protocol (IP) address of the sender node of the data, and multiplex the data into a second single serial data stream;

the multiplexer being operable to receive ~~a~~ the second single serial data stream from the subscriber access multiplexer and demultiplex the data into a plurality of data frames; and

the switch being operable to switch each of the demultiplexed data frames to the first plurality of ports based on ~~a~~ the port identifier contained in each of the multiplexed data frames.

8. (Currently amended) Telecommunication equipment, comprising:

a switch for receiving data frames from a first plurality of ports and switching the data frames to a second plurality of ports, each data frame including a header information, the switch operable to insert without removing any existing header information a unique port identifier into a predefined header field of each data frame to identify the port from which each data frame is received;

a multiplexer coupled to the switch and operable to multiplex the data frames containing the unique port identifiers ~~from the second plurality of ports~~ into a single serial data stream, the multiplexer being operable to multiplex the data frames from the second plurality of ports into a single synchronous payload envelope; and

a subscriber access multiplexer operable to receive the single serial data stream from the multiplexer and route each data frame to a destination network node based on the unique port identifier, a media access control (MAC) address, and internet protocol (IP) address in each data frame.

9. (Currently amended) A method comprising:

receiving with a switch at a first node data frames from a plurality of Ethernet ports, each data frame including header information;

adding a unique port identifier to a predetermined field within the header information in each data frame from each Ethernet port, without removing header information, in order to identify the Ethernet port from which each data frame came; and

multiplexing the data frames containing the unique port identifiers ~~from the plurality of Ethernet ports~~ into a single data stream for transmission by a synchronous transmission medium to a second node.

10. Cancelled.

11. (Currently amended) The method, as set forth in claim 9, wherein multiplexing the data frames containing the unique port identifiers ~~comprises multiplexing the data frames~~ into a single synchronous payload envelope.

12. (Currently amended) A method comprising:

receiving data frames at a switch from a plurality of Ethernet ports, each data frame including header information;

adding a unique port identifier to the header information in each data frame from each Ethernet port to identify the Ethernet port from which each data frame came;

multiplexing the data frames containing the unique port identifiers ~~from the plurality of Ethernet ports~~ into a single data stream for transmission by a synchronous transmission medium;

wherein adding the unique port identifier comprises inserting the unique port identifier into a virtual local area network identifier (VID) field and each data frame is a tagged media access control (MAC) data frame.

13. (Currently amended) The method, as set forth in claim 9, further comprising converting the single ~~serial~~ data stream into synchronous optical network (SONET) optical signals for transmission.

14. (Currently amended) The method, as set forth in claim 9, further comprising:

transmitting the single data stream by synchronous data transmission to the second node;

receiving the single ~~serial~~ data stream at the second node;

demultiplexing the single serial data stream at the second node into data frames from each Ethernet port; and

routing each of the data frames from each Ethernet port based on the unique port identifier.

15. (Currently amended) The method, as set forth in claim 9, further comprising:

receiving data frames at the second node from a plurality of sender nodes in a network;

inserting into each data frame received from the plurality of sender nodes a unique port identifier based on an IP address of the sender node of the data;

multiplexing the data frames received from the plurality of sender nodes, containing the unique port identifiers, into ~~another~~ a single serial data stream for transmission;

transmitting the single serial data stream from the second node to the first node;

receiving at the first node the single serial data stream from the second node and demultiplexing the single serial data stream from the second node into data frames from each sender node; and

switching at the first node the demultiplexed data frames based on the unique port identifier to the first plurality of Ethernet ports.

16. (Currently amended) The method, as set forth in claim 9, further comprising transmitting the single data stream synchronous transmission media to the second node and receiving the single ~~serial~~ data stream at the second node and routing the data frames to a destination network node based on the unique port identifier, a media access control (MAC) address, and an internet protocol (IP) address in each data frame.

17. (Currently amended) A method of multiplexing data from a plurality of Ethernet ports for transmission, comprising:

receiving data frames from the plurality of Ethernet ports, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each of the plurality of Ethernet ports, without removing any header information, to identify the Ethernet port from which each data frame came;

multiplexing the data frames containing the unique port identifiers ~~from the plurality of Ethernet ports~~ into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission to a second node.

18. Cancelled.

19. (Currently amended) A method of multiplexing data from a plurality of ports for transmission, comprising:

receiving data frames from the plurality of ports, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which the each data frame came;

multiplexing the data frames containing the unique port identifiers ~~from the plurality of ports~~ into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission;

wherein adding the unique port identifier comprises inserting the unique port identifier into a virtual local area network identifier (VID) field and each data frame is a tagged media access control (MAC) data frame.

20. (Currently amended) The method, as set forth in claim 17, further comprising:

receiving at the second node the optical signal and converting to a single data stream;

demultiplexing at the second node the data stream from each port into the data frames containing the unique port identifiers; and

routing the demultiplexed data frames ~~from each of the Ethernet ports~~ based on the unique port identifier.

21. (Currently amended) A method comprising:

receiving at a first node a first plurality of data frames from ~~the~~ a first plurality of ports, each data frame including header information containing at least a destination address;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which each data frame came;

multiplexing the plurality of data frames containing the unique port identifiers ~~from the first plurality of ports~~ into a single synchronous payload envelope;

converting the multiplexed data frames into a optical signal for transmission;

receiving at a second node a second plurality of data frames from a plurality of sender nodes in a network;

inserting into each of the second plurality of data frames a unique port identifier based on an internet protocol (IP) address of the sender node of the data;

multiplexing the second plurality of data frames from the plurality of sender nodes, containing the unique port identifiers, into a single serial data stream for transmission and transmitting the single data stream to the first node;

receiving at the first node the ~~data frames~~ single serial data stream from the ~~first~~ second node and demultiplexing the second plurality of data frames in the single serial data stream from the second node into data frames from each sender node; and

switching the demultiplexed data frames based on the unique port identifier to the first plurality of ports.

22. (Currently amended) A method of multiplexing data from a plurality of ports at a first node for transmission to a second node, comprising:

receiving data frames from the plurality of ports at the first node, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which each data frame came;

multiplexing the data frames containing the unique port identifiers ~~from the plurality of ports~~ into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission to the second node; ~~and~~

transmitting the single synchronous payload envelope to the second node; and

receiving the multiplexed data frames containing the unique port identifiers at the second node, demultiplexing the data frames containing the unique port identifiers and routing each data frame to a destination network node based on the unique port identifier, a media access control (MAC) address, and internet protocol (IP) address in each data frame.